TECHNOLOGY NEEDS/OPPORTUNITIES STATEMENT

TECHNOLOGY TO DISPOSE OF 12 DRUMS OF Pu-238 (500 G/DRUM)

Identification No.: RL-MW014
Date: October 2001

Program: Waste Management
OPS Office/Site: Richland Operations Office/Hanford Site
PBS No.: RL-CP02
Waste Stream: 1569 – Pu-238, 3490 – M-91 Feed
TSD Title: TBD
Operable Unit (if applicable): N/A
Waste Management Unit (if applicable): N/A
Facility: Future M-91 Facility.

Priority Rating:

This entry addresses the "Accelerated Cleanup: Paths to Closure (ACPC)" priority:

____ 1. Critical to the success of the ACPC.
____ 2. Provides substantial benefit to ACPC projects (e.g., moderate to high life-cycle cost savings or risk reduction, increased likelihood of compliance, increased assurance to avoid schedule delays).
_X_ 3. Provides opportunities for significant, but lower cost savings or risk reduction, and may reduce uncertainty in ACPC project success.

Need Title: Technology to Dispose of 12 Drums of Pu-238 (500 g/drum).

Need/Opportunity Category: *Technology Need* -- There is no existing or currently identified technology capable of solving the Site's problem (i.e., technology gap exists, no baseline approach has been identified).

Need Description: Develop methods to retrieve, package, treat, and dispose of 12 drums of ^{238}Pu (500g/drum) from the Hanford Site low-level burial ground (LLBG)

Schedule Requirements:

Earliest Date Required: 2007

Latest Date Required: 2013

Technology needs to be established between end of FY 2007 (conceptual design start) and 2013 (start of operations), to support the M-91 facility baseline.

Problem Description: Currently no methods exist for retrieving, packaging, and disposing of the 12 drums of ^{238}Pu. The material is currently identified on the EM-30 Disposition Maps (alternative case) as being shipped to the Savannah River Site (SRS) for disposal, but it is uncertain if this will occur.

Potential Life-Cycle Cost Savings of Need (in $000s) and Cost Savings Explanation: No measurable cost savings are expected. This need is to establish method to treat a waste stream where no method currently exists

Benefit to the Project Baseline of Filling Need: Establish method for disposal of ^{238}Pu.

Relevant PBS Milestone: A2G-08-109 M-91-15 Complete Acquisition of Facilities and Initiate Treatment of RH and Large Container (CH) LLMW

***Functional Performance Requirements*:** The systems must be capable of safely retrieving, packaging, treating, and transporting the 12 drums of ^{238}Pu for disposal.

***Work Breakdown Structure (WBS) No.*:**	***TIP No.:***
1.2.2	N/A

***Justification For Need*:**

Technical: Currently no methods exist for treating and disposing of the 12 drums of ^{238}Pu.

Regulatory: For WIPP shipment, there is a limit of about 2 grams of ^{238}Pu per drum, due to the limit on hydrogen-generating material for disposal (TRUPACT II Safety Analysis Report).

Environmental Safety & Health: N/A

Cultural/Stakeholder Concerns: N/A

Other: N/A

Current Baseline Technology: Repackaging to meet WIPP criteria for allowable ^{238}Pu would result in approximately 2,650 drums (See Regulatory Justification above).

End-User: Waste Management.

Contractor Facility/Project Manager: TBD.

Site Technical Point-of-Contact: Dale Black, Fluor Hanford, Inc. (FH), (509) 376-8458, Fax (509) 372-1441, Dale_G_Black@rl.gov.

DOE End-User/Representative Point-of-Contact: Kevin Leary, DOE-RL, (509) 373-7285, Fax (509) 372-1926, Kevin_D_Leary@rl.gov.

Waste volume, m^3	12 drums of ^{238}Pu (5.3 Kg ^{238}Pu)
Waste form	Solid
Waste stream I.D.	1569
Contaminants and co-contaminants	Alpha
Function of technology	Disposal of ^{238}Pu waste
Source category	Came from Savannah River Site